3) The method of claim 2 wherein said receiving is performed using a receiver optical system comprising a receiver telescope and at least one optical band-pass filter suitable for passing light that has interacted with the mobile agent and wherein said photodetection system comprises at least one photodetector with gain and at least one digitizer to record the intensity of the interacted light.

4) The method of claim 2 wherein said receiving is performed using a receiver optical system comprising a means for recording an image of the area illuminated by the laser transmitter.

5) The method of claim 4 wherein said means for recording an image comprises a gated camera and lens system.

6) The method of claim 2 wherein the mobile agent is a living organism.

7) The method of claim 6 wherein the mobile agent is a member of one of the taxonomic classes of insecta, crustacea, arachnida, osteichthyes, chondrichthyes, aves, and mammalia.

8) The method of claim 7 wherein the mobile agent is a member of the taxonomic order of hymenoptera.

9) The method of claim 2 wherein the mobile agent is non-living.

10) The method of claim 2 wherein said interacted light is elastically scattered from the mobile agent.

11) The method of claim 10 where a wavelength of said transmitted light is selected to minimize scattering from an aerosol or a gas molecule while maximizing a scattering reflectance from a mobile agent.

12) The method of claim 2 wherein the mobile agent emits said interacted light at a wavelength different from the wavelength of the pulse of transmitted light.

13) The method of claim 2 wherein a material adherent to the mobile agent emits said interacted light at a wavelength different from the wavelength of said pulse of transmitted light.

14) The method of claim 2 wherein said pulse of transmitted light comprises a collimated light beam and wherein said collimated light beam is translated laterally between a plurality of pulses to scan an area.

15) The method of claim 14 wherein said intensity of said pulse of interacted light is measured as a function of time since said known time of transmitting the transmitted pulse of light, thereby generating a time-and-intensity profile, and a distance to said mobile agent is calculated using said time-and-intensity profile.

16) The method of claim 15 wherein a plurality of said time-and-intensity profiles are compared using a change-detection algorithm to generate a multi-dimensional mapping of the location of said mobile agent.

17) The method of claim 2 wherein said pulse of transmitted light comprises an uncollimated light beam illuminating an area wherein a location of said mobile agent is to be determined.

18) The method of claim 17 wherein said pulse of interacted light is received by a means for recording an image to generate a 2-dimensional image of said intensity of said interacted light at a plurality of times later than said pulse of transmitted light.

19) The method of claim 18 wherein said means for generating an image is selected from the group consisting of a CCD array, an intensified CCD array, a CID array, and an IR focal plane array.

20) The method of claim 18 wherein said intensity of said pulse of interacted light is measured as a function of time since said known time of transmitting the transmitted pulse of light, thereby

generating a time-and-intensity profile, and a distance to said mobile agent is calculated using said time-and-intensity profile.

21) The method of claim 20 wherein a plurality of said time-and-intensity profiles are compared using a change-detection algorithm to generate a multi-dimensional mapping of the location of said mobile agent.